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| APPLICATION NO.               | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-------------------------------|-------------|----------------------|---------------------|------------------|
| 10/811,930                    | 03/30/2004  | Jin Woong Kim        | 2832-0175PUS1       | 2908             |
| 2292                          | 7590        | 07/13/2007           | EXAMINER            |                  |
| BIRCH STEWART KOLASCH & BIRCH |             |                      | BOZADJIAN, GEORGE D |                  |
| PO BOX 747                    |             |                      | ART UNIT            | PAPER NUMBER     |
| FALLS CHURCH, VA 22040-0747   |             |                      | 1709                |                  |
| NOTIFICATION DATE             |             | DELIVERY MODE        |                     |                  |
| 07/13/2007                    |             | ELECTRONIC           |                     |                  |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

|                              |                     |              |
|------------------------------|---------------------|--------------|
| <b>Office Action Summary</b> | Application No.     | Applicant(s) |
|                              | 10/811,930          | KIM ET AL.   |
|                              | Examiner            | Art Unit     |
|                              | George D. Bozadjian | 1709         |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 30 March 2004.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 10-20 is/are allowed.
- 6) Claim(s) 1-3 and 9 is/are rejected.
- 7) Claim(s) 4-8 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. 10-2003-0020205.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

|  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Priority***

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

The certified copy has been filed in parent Application No. 10/811930, filed on March 30, 2004.

### ***Drawings***

1. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because Figs 5 through 7 are replete with errors as specified below. Applicant is advised to employ the services of a competent patent draftsperson outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "82 (Fig. 4)" and "84 (Fig. 5)" have both been used to designate "an automatic temperature switch". Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the

examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

1. The drawings are objected to under 37 CFR 1.83(a) because they fail to show the correct “cross-sectional view taken along the line A – A in FIG. 5” as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: “line B – B in FIG. 5”. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR

1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to because the holes, in Fig. 7, represent different descriptive features when compared to Fig. 5 (the main figure). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4. In addition to Replacement Sheets containing the corrected drawing figure(s), applicant is required to submit a marked-up copy of each Replacement Sheet including annotations indicating the changes made to the previous version. The marked-up copy must be clearly labeled as "Annotated Sheets" and must be presented in the amendment or remarks section that explains the change(s) to the drawings. See 37 CFR 1.121(d)(1). Failure to timely submit the proposed drawing and marked-up copy will result in the abandonment of the application.

*Specification*

5. The abstract of the disclosure is objected to because it exceeds the 150 maximum word count. Correction is required. See MPEP § 608.01(b).

6. 35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms which are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. Examples of some unclear, inexact or verbose terms used in the specification are: a) brief description of the drawings for Figs. 6 is inconsistent with Fig. 5, and description in Fig. 7 is not present in Fig. 5, as described above; b) inconsistent part numbers throughout specification [page 10, lines 4-5, 21]; c) description not consistent with drawings nor each other [page 13, lines 17-19; page 15, lines 11-18; page 18, 13-18].

7. The disclosure is objected to because of the following informalities: incomplete sentence in page 18, lines 12-16.

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-3, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over NAKAMURA et al. (JP 2003019382, hereafter '382) in view of Hutchinson (U.S. Patent 6,647,204, hereafter '204).

'382 teaches a steam supplying apparatus (6 and 7) in a washing machine (1) [Abstract; Figs. 1-5] comprising:

a tank (7) connected to a water supply unit (16) adapted to supply wash water, the tank (7) being connected with a wash tub (2) via a steam supply line (9) [Abstract; Figs. 1-5]; a heater (18 – shown in Fig. 5) arranged in the tank (7), and adapted to heat wash water supplied into the tank (7), thereby generating steam to be supplied into the wash tub [Abstract; Figs. 1-5; parag. 0015].

'382 teaches the limitations stated above, but it does not teach the tank being connected at a top portion with a wash tub, and it also does not teach an air compressible space in the tank above a predetermined water level limit of the tank. However, '204 teaches a steam generating apparatus wherein the steam outlet (116 or 118 to 14) comes out the top of the steam generator (10) to provide a path for steam to eject [Figs. 4, 16, 18, 22; col. 9, lines 17-26; col. 13, lines 19-45]. This inherently limits the water level because if exit 116 or 118 were overflowed, the air

trapped above would eventually reach inlet water pressure and the water would seek to exit through 116. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have constructed the steam supply line (14) of '204 to the tank (7) of '025 at the top portion, to have allowed steam generated in the tank to have ejected. It would also have been obvious to have used '204 as the particular steamer of '382 with reasonable expectation of success. It is inherently known that hot air, including steam, has a low density. Therefore, one of ordinary skill in the art would know to place a hot air or steam exhaust at a top portion of a tank to allow it exhaust.

'204 also teaches a water level limiting means arranged in the form of an air-compressible space (363) in the tank (348) above a predetermined water level limit (section between 366 and 362) of the tank (348), the water level limiting means (section between 366 and top portion of 348) draining, into the steam supply line (312), an amount of water exceeding the predetermined water level limit (362) after a water level of the tank (348) reaches the predetermined water level limit (section between 366 and 362), using an air pressure generated in the water level limiting means (section between 366 and top portion of 348) [Fig. 36; col. 13, lines 4-45; col. 17 and 18].

'204 further teaches other embodiments that meets the metes and bounds of the third part of claim 1. This type of water level limiting system provides a number of operational and advantageous features and safety characteristics [col. 21, lines 5-12]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the water level limiting system of '204 as an alternative to that of '382 to have provided a number of operations and advantageous features and safety characteristics.

10. Claim 2: '382 teaches all the limitations of claim 1 above. It teaches an air chamber (section between 20 and top portion of 18) in the tank (7) above the predetermined water level limit (section between 20 and bottom portion of 18) of the tank (7), the air chamber (section between 20 and top portion of 18) being reduced in volume in accordance with an increase in the water level of the tank (7), thereby causing air existing in the air chamber (section between 20 and top portion of 18) to be compressed. It also teaches the steam supply line (9) allows excessive amount of water to be drained from the tank along with the steam generated in the tank (7) [Abstract; Figs. 1-5]. It does not teach an extension passage for the steam supply line into the tank. However, '204 teaches an extension passage (116 to 118) connected to the steam outlet (14) while extending into the tank (10), and the other end is arranged at the water level limit (section between 118 or 14 and bottom portion of 10) of the tank (10) to minimize the effect of surface tension that permits water droplets to creep into the line (116 to 118, and 14) during the production of steam [Figs. 15-18, 22, col. 13, lines 4-45]. The arrangement of this apparatus also meets the claimed matter when water surpasses that water level limit of the tank. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have added such an extension line to the steam supply line (9) of '382 to have minimized the effect of surface tension that permitted water droplets to creep into the line during the production of steam, and to have formed an additional passageway for water to flow out through the steam line when the level surpasses the water level limit of the tank.

'204 also teaches an air chamber (section between 118 or 14 and top portion of 10) in the tank (10) above the predetermined water level limit (section between 118 or 14 and bottom portion of 10) of the tank (10), the air chamber (section between 118 or 14 and top portion of 10)

inherently being reduced in volume with an increases in the water level of the tank (10), thereby causing air existing in the air chamber (section between 118 or 14 and top portion of 10) to be compressed [Figs. 4 and 22; col. 8, lines 43-51; col. 9, lines 17-26; col. 13, lines 19-45, col. 14, lines 60-67; col. 15, lines 1-6]. '204 further teaches other embodiments that meets the metes and bounds of the first part of claim 2, for example figure 36.

11. Claim 3: '382 teaches all the limitations of claim 1 above. It does not teach the water supply line extending into the tank. '204 teaches a steam supplying apparatus (342) wherein the water supply line (327) connecting the water supply unit (326) and the tank (348) extends, at an end thereof, into the tank (348) through the top portion of the tank (348) while passing through the air chamber (363) such that the end thereof is arranged at the predetermined water level limit (362) of the tank (348), to minimize the effect of surface tension that permits water droplets to creep into the line (327) during the production of steam [Fig. 36; col. 13, lines 4-45; col. 17 and 18]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have added such an extension line to the water supply line (16) of '382 to have minimized the effect of surface tension that permitted water droplets to creep into the line during the production of steam.

12. Claim 9: The steam supplying apparatus (6 and 7) of '382 teaches the steam supply line (9) having a nozzle structure (20) at an end thereof connected to the wash tub (2) [Abstract; Figs. 1-5].

***Allowable Subject Matter***

13. Claims 4-8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. References are available that teach some of the individual characteristics or features of the claims, but there is no motivation of any sort to combine them.

14. Claims 10-20 are allowed.

15. The following is an examiner's statement of reasons for allowance: There are no references available that teach the claimed materials as a whole. The prior art of record does not fairly teach or suggest a mesh installed at the predetermined water level limit within the context of the claim language.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. OMURA et al. (JP 2003093775 A) and KAWAGUCHI, TOMOYA (JP 04158896 A) teach washing machines where steam generating apparatuses are used.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George D. Bozadjian whose telephone number is 571-270-1871. The examiner can normally be reached on M-F 8:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cleveland can be reached on 571-272-1418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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MICHAEL B. CLEVELAND  
SUPERVISORY PATENT EXAMINER